FIG. 1

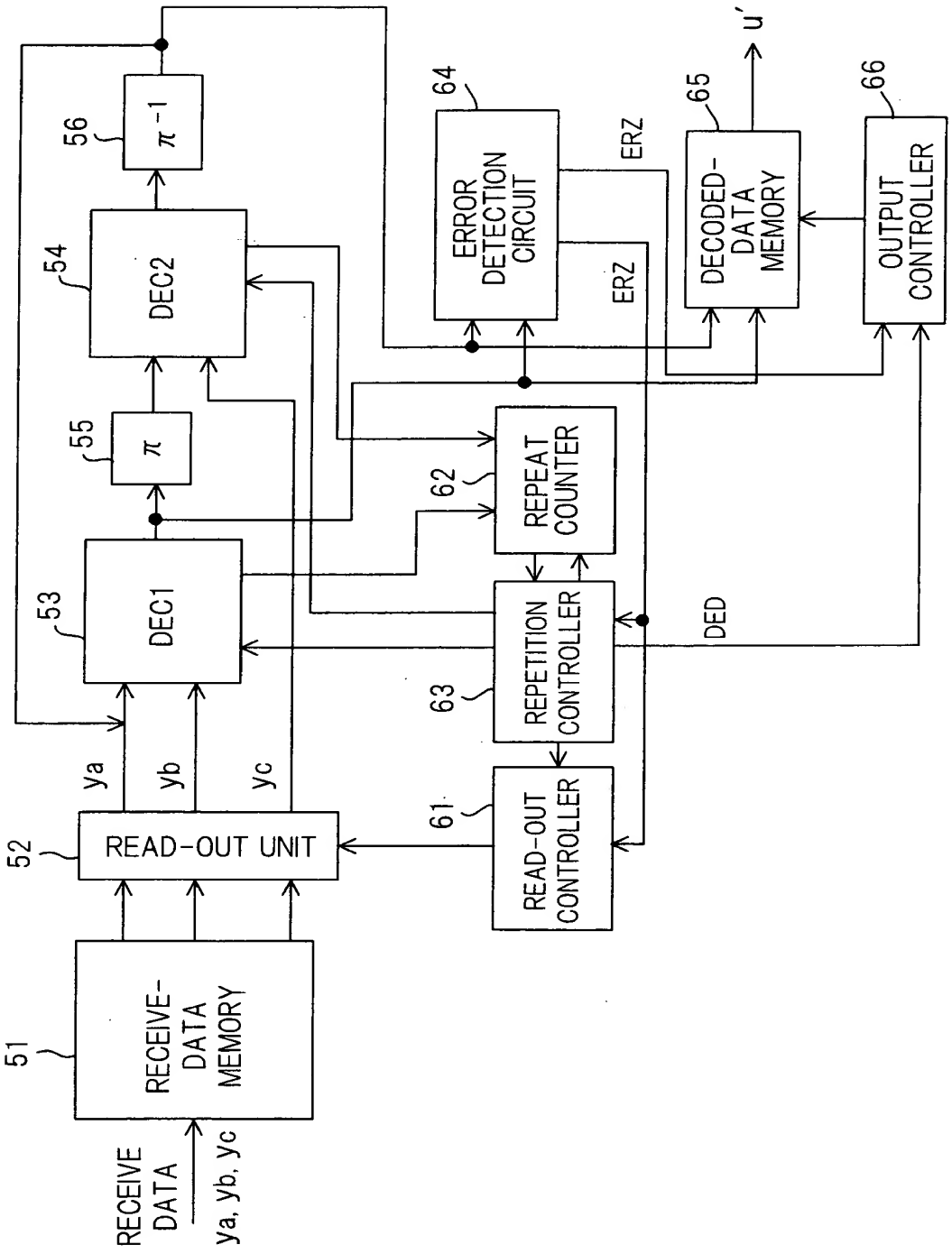

RECEIVE DATA
ya, yb, yc
51
RECEIVE-DATA MEMORY
52
READ-OUT UNIT
ya
yb
yc
53
DEC1
54
DEC2
55
π
56
π -1
61
READ-OUT CONTROLLER
62
REPEAT COUNTER
63
REPETITION CONTROLLER
64
ERROR DETECTION CIRCUIT
ERZ
ERZ
DED
65
DECODED-DATA MEMORY
u'
66
OUTPUT CONTROLLER

FIG. 2

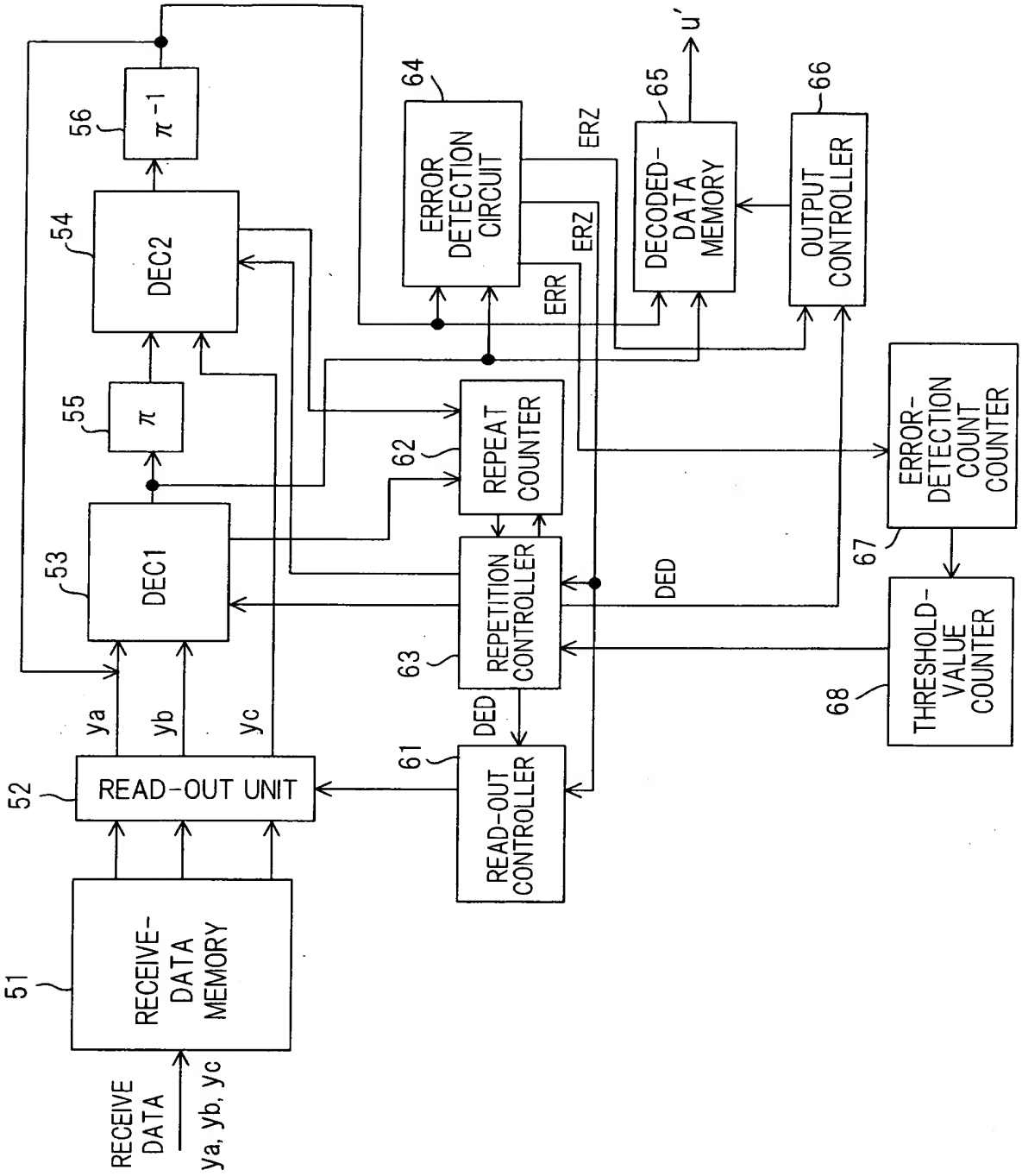

RECEIVE DATA
ya, yb, yc
51
RECEIVE-DATA MEMORY
52
READ-OUT UNIT
ya
yb
yc
53
DEC1
54
DEC2
55
π
56
π -1
61
READ-OUT CONTROLLER
DED
63
REPETITION CONTROLLER
62
REPEAT COUNTER
64
ERROR DETECTION CIRCUIT
ERR
ERZ
ERZ
65
DECODED-DATA MEMORY
u'
66
OUTPUT CONTROLLER
DED
67
ERROR-DETECTION COUNT COUNTER
68
THRESHOLD-VALUE COUNTER

FIG. 3

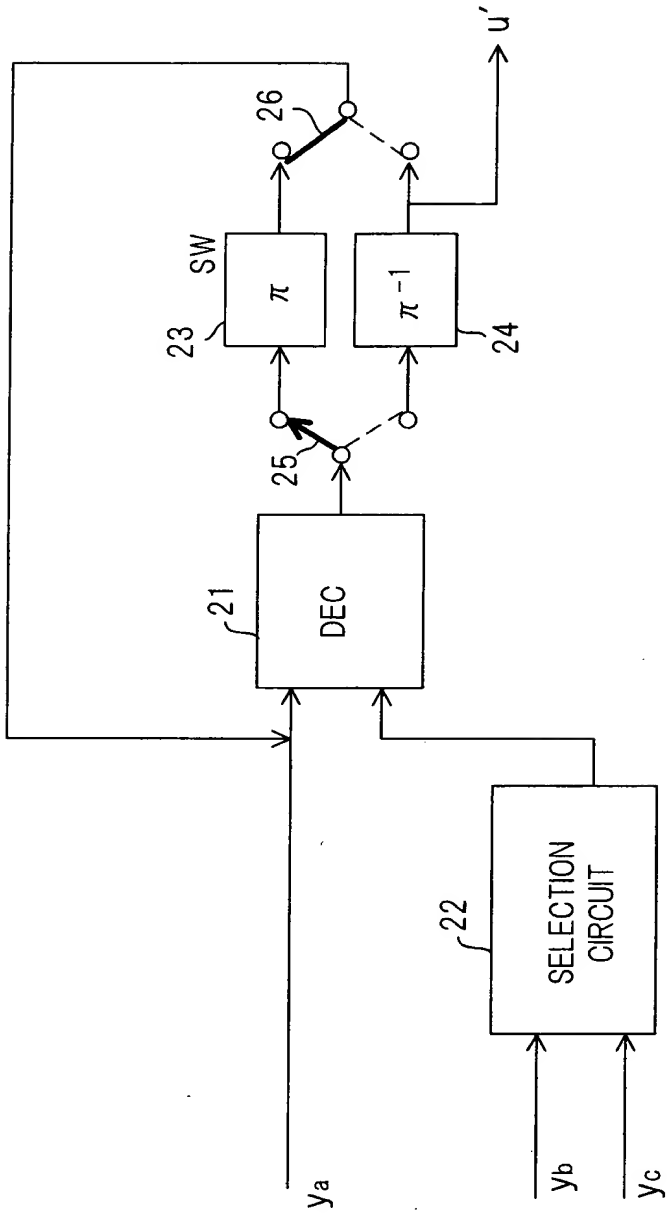
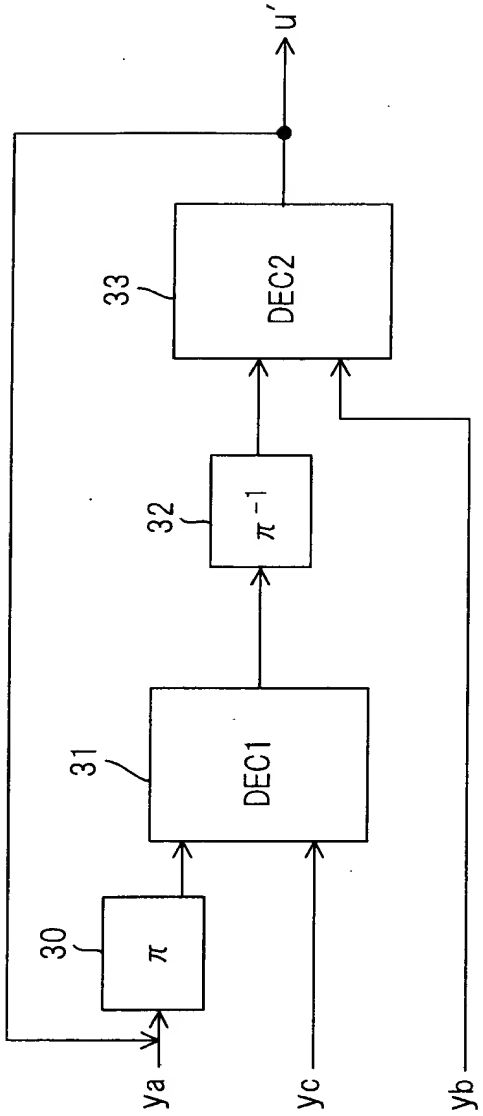


FIG. 4



T06070" 562T0660

ERROR PATTERN ACCORDING TO THIS EMBODIMENT

ERROR ON PER-BIT BASIS

ERROR ON PER-INFORMATION-BLOCK BASIS

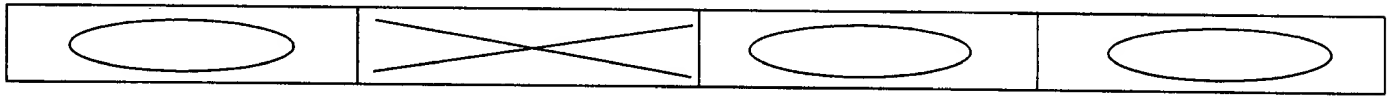


FIG. 5

FIG. 6

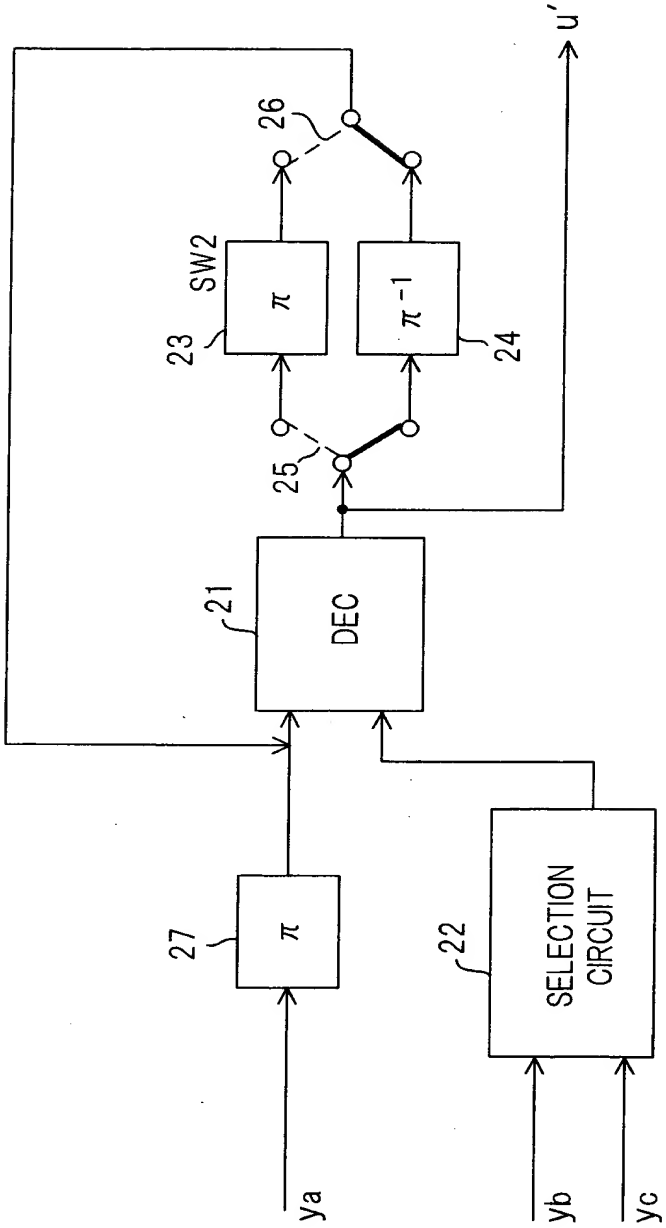


FIG. 7

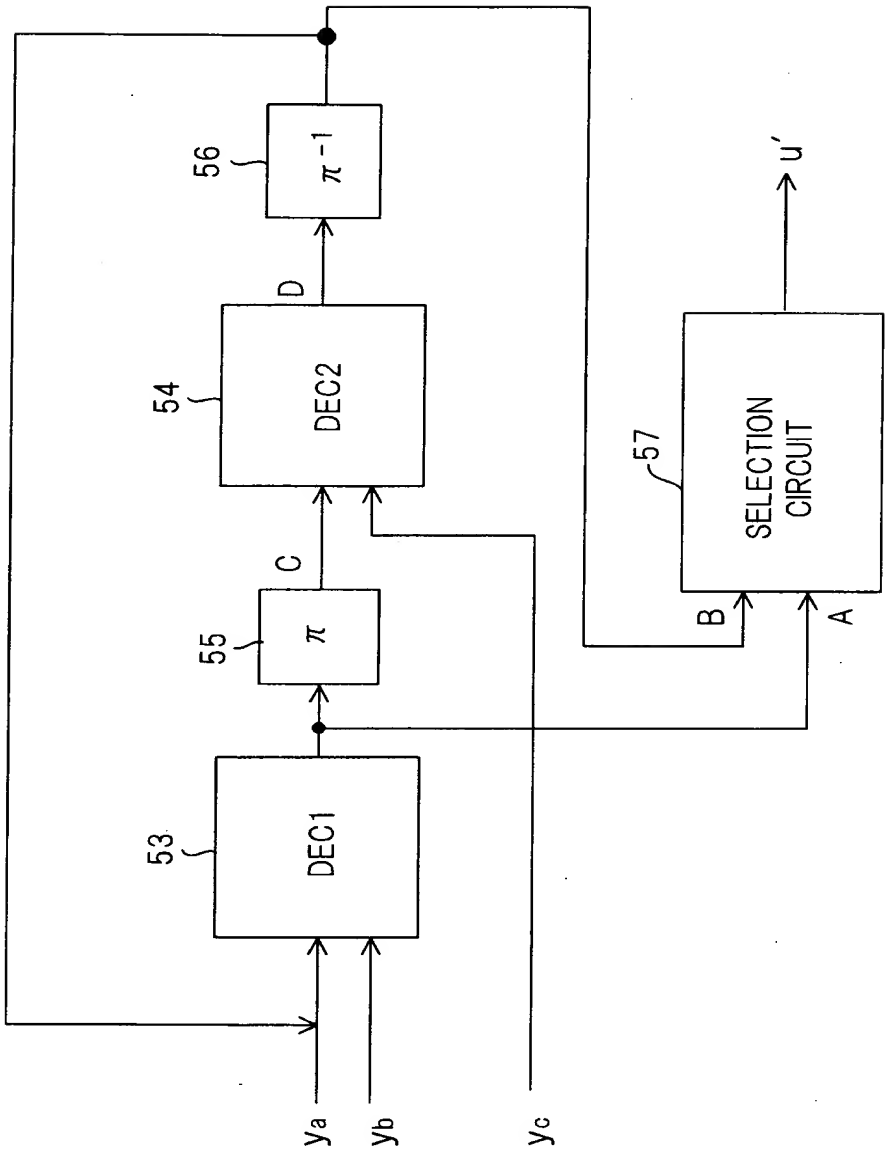


FIG. 8

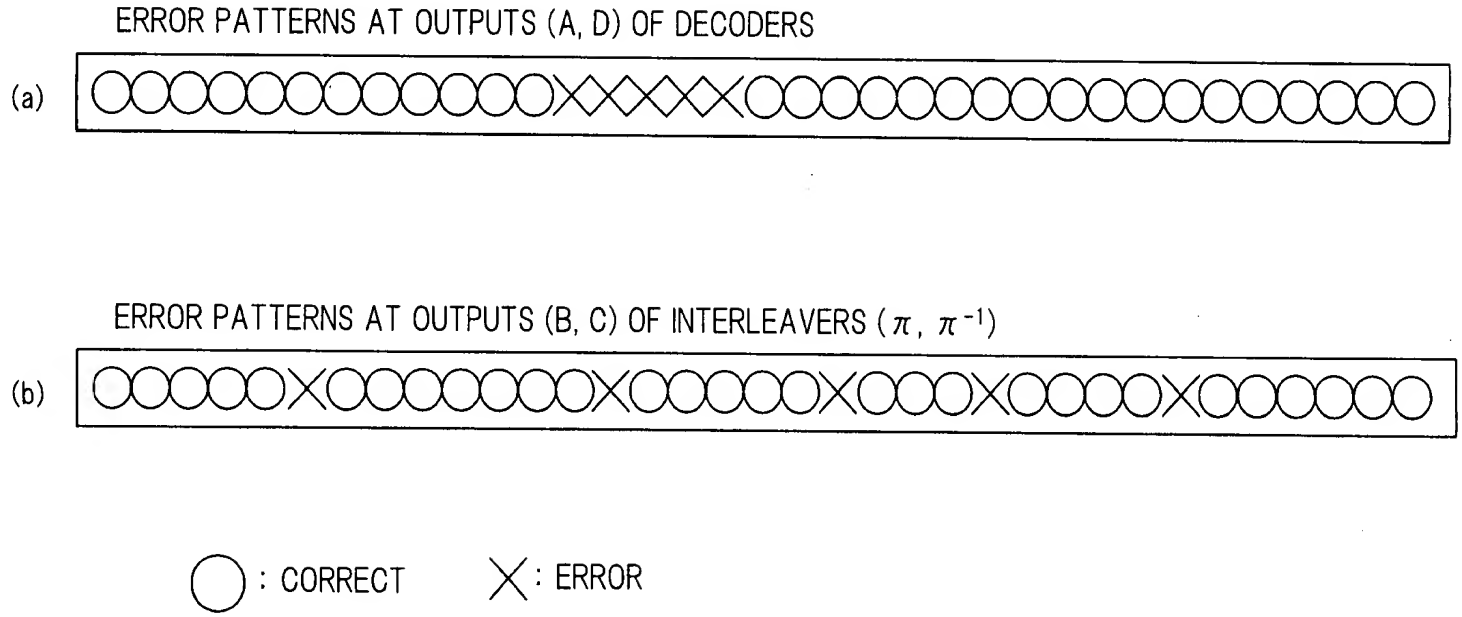

ERROR PATTERNS AT OUTPUTS (A, D) OF DECODERS
(a)
ERROR PATTERNS AT OUTPUTS (B, C) OF INTERLEAVERS (π, π-1)
(b)
: CORRECT
: ERROR

FIG. 9

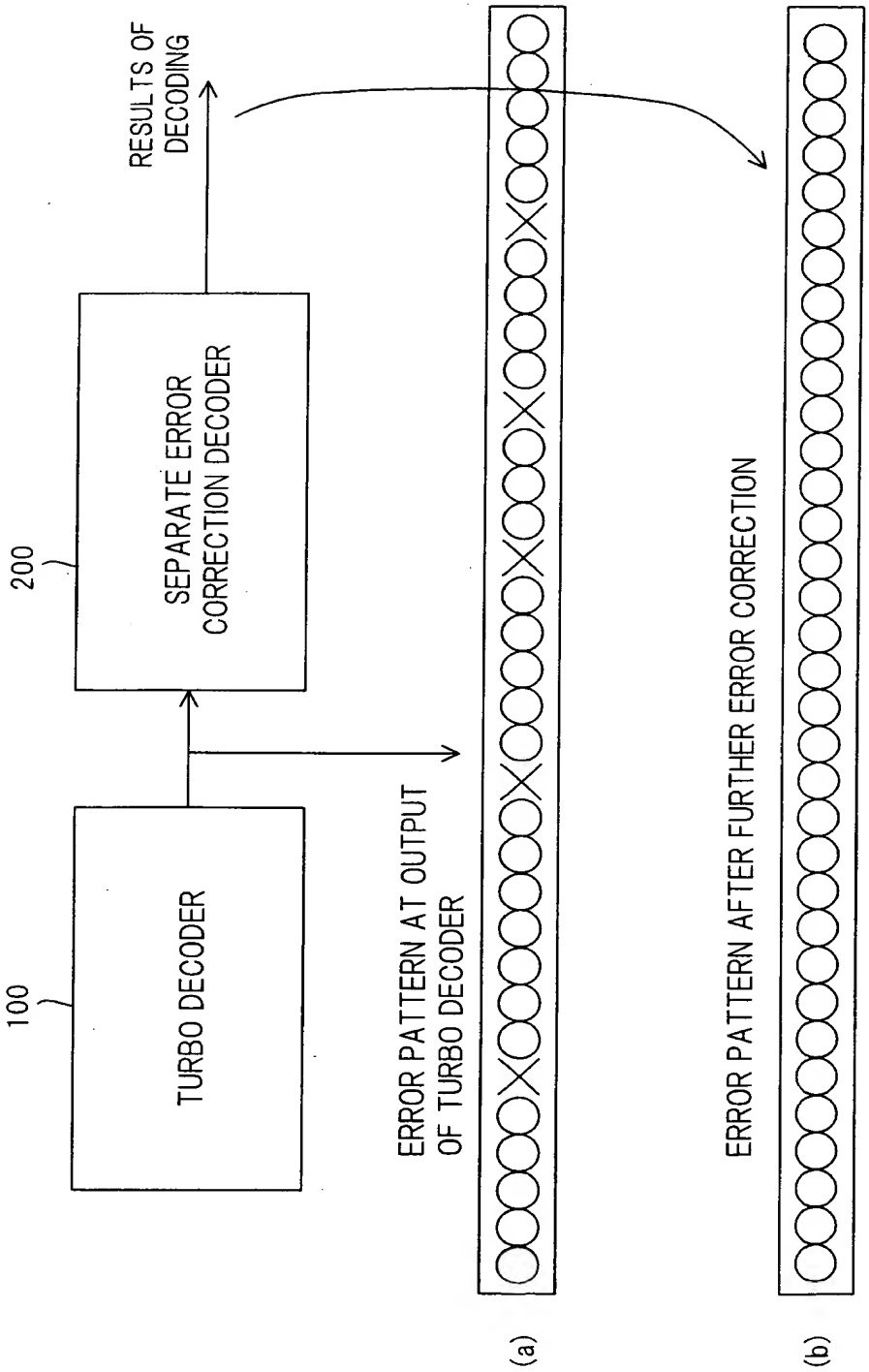

100
TURBO DECODER
200
SEPARATE ERROR CORRECTION DECODER
RESULTS OF DECODING
ERROR PATTERN AT OUTPUT OF TURBO DECODER
(a)
ERROR PATTERN AFTER FURTHER ERROR CORRECTION
(b)

FIG. 10

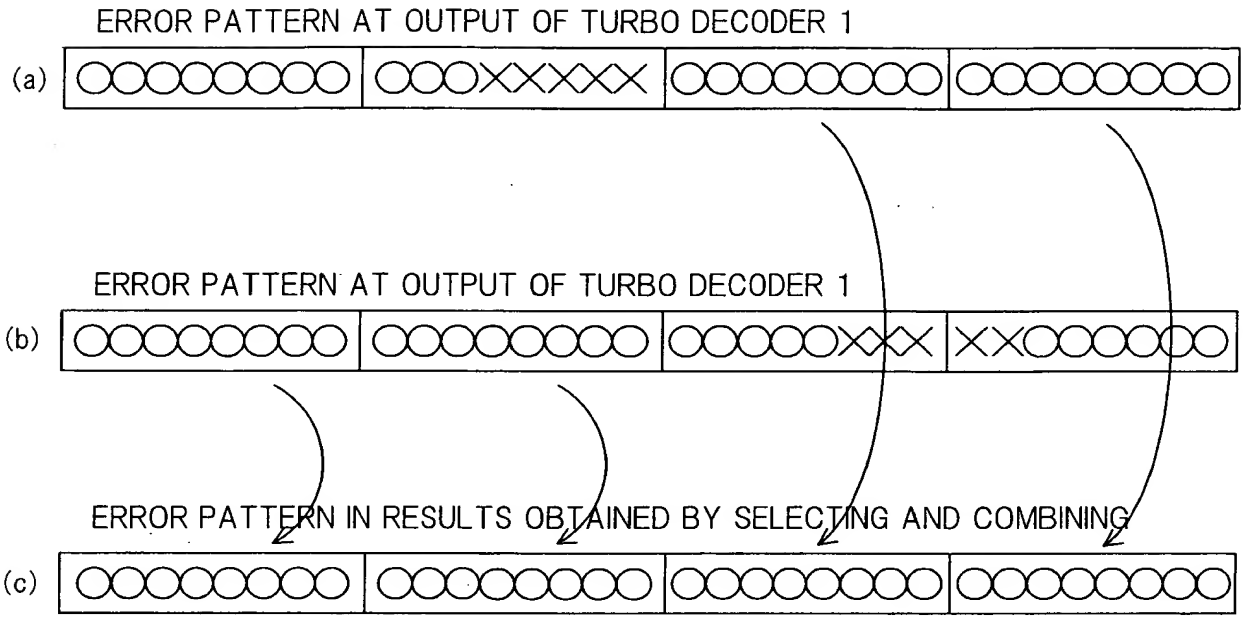

ERROR PATTERN AT OUTPUT OF TURBO DECODER 1
(a)
ERROR PATTERN AT OUTPUT OF TURBO DECODER 1
(b)
ERROR PATTERN IN RESULTS OBTAINED BY SELECTING AND COMBINING
(c)

FIG. 11

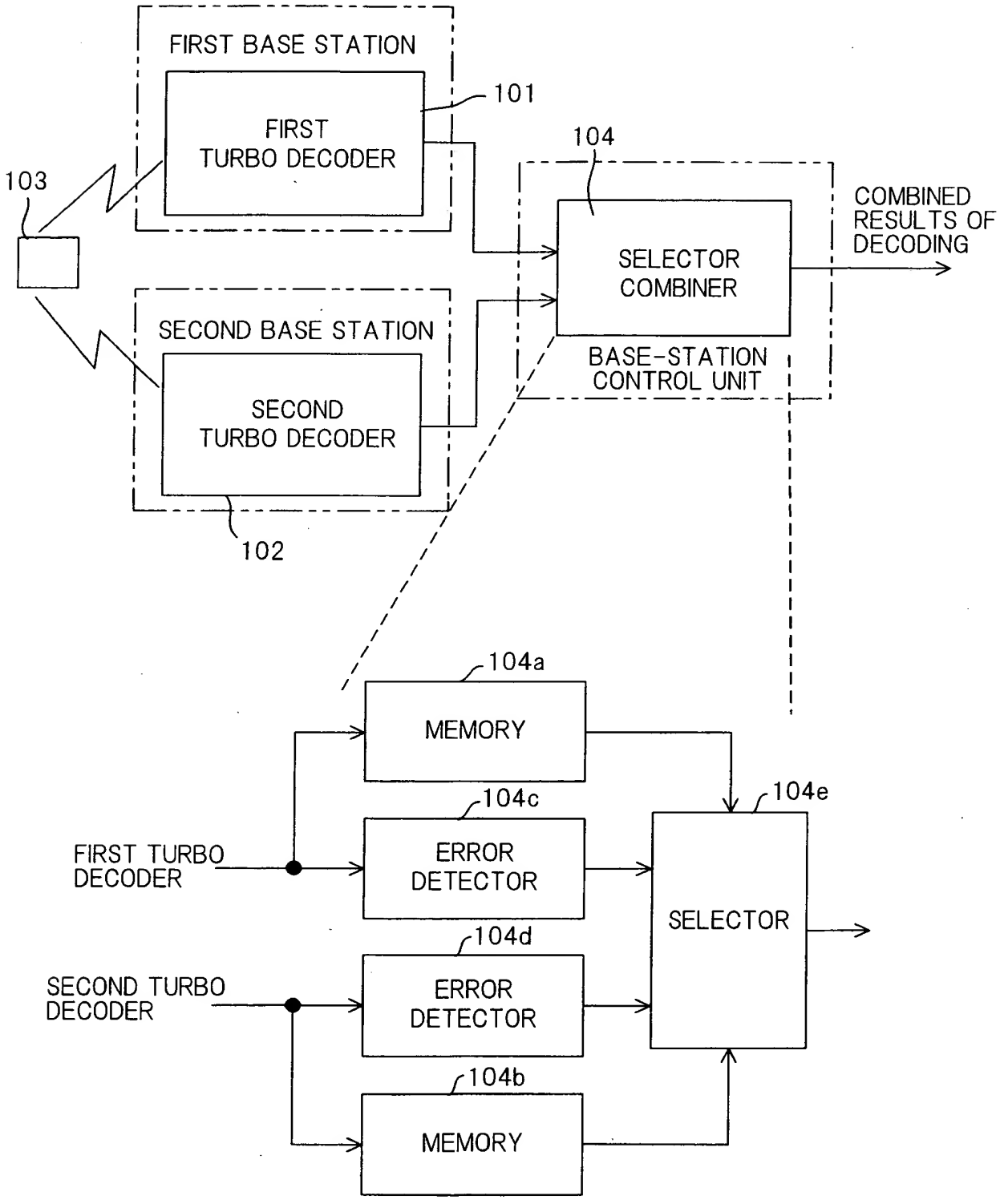

FIRST BASE STATION
FIRST TURBO DECODER
101
103
104
SELECTOR COMBINER
COMBINED RESULTS OF DECODING
SECOND BASE STATION
SECOND TURBO DECODER
BASE-STATION CONTROL UNIT
102
104a
MEMORY
104c
ERROR DETECTOR
104e
FIRST TURBO DECODER
SELECTOR
104d
ERROR DETECTOR
SECOND TURBO DECODER
104b
MEMORY

FIG. 12

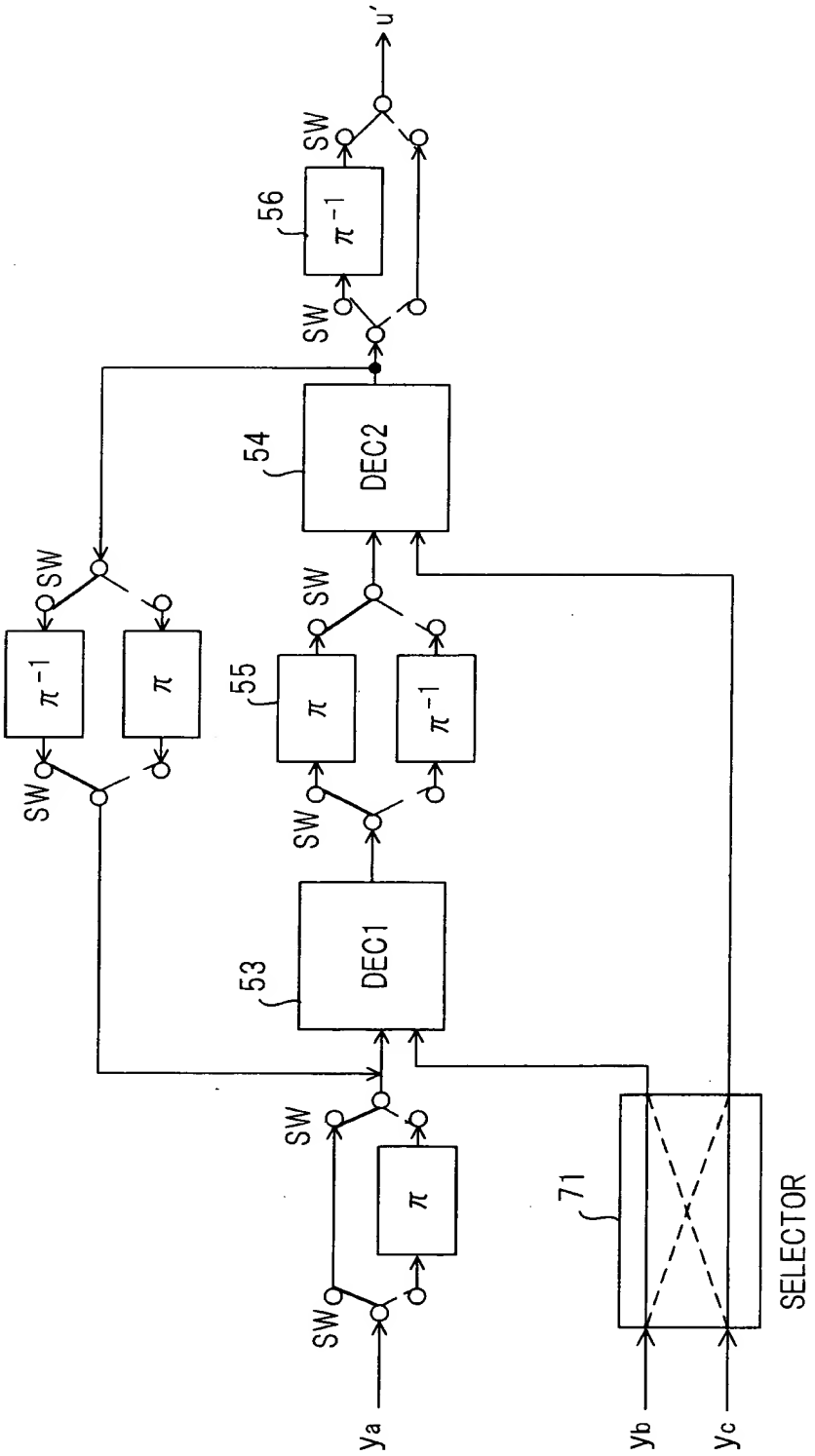

u'
SW
56
π^{-1}
SW
54
DEC2
SW
π^{-1}
π
SW
55
π
π^{-1}
SW
SW
53
DEC1
SW
π
SW
71
SELECTOR
y_a
y_b
y_c

FIG. 13

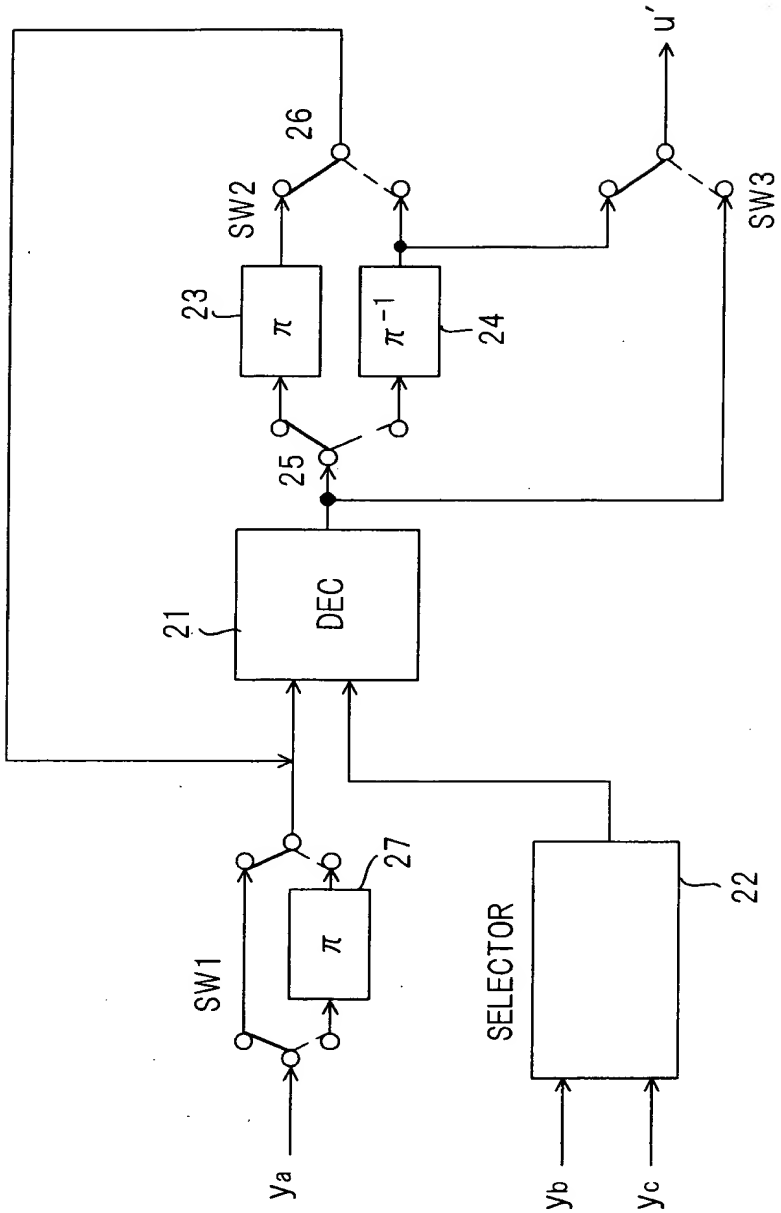


FIG. 14

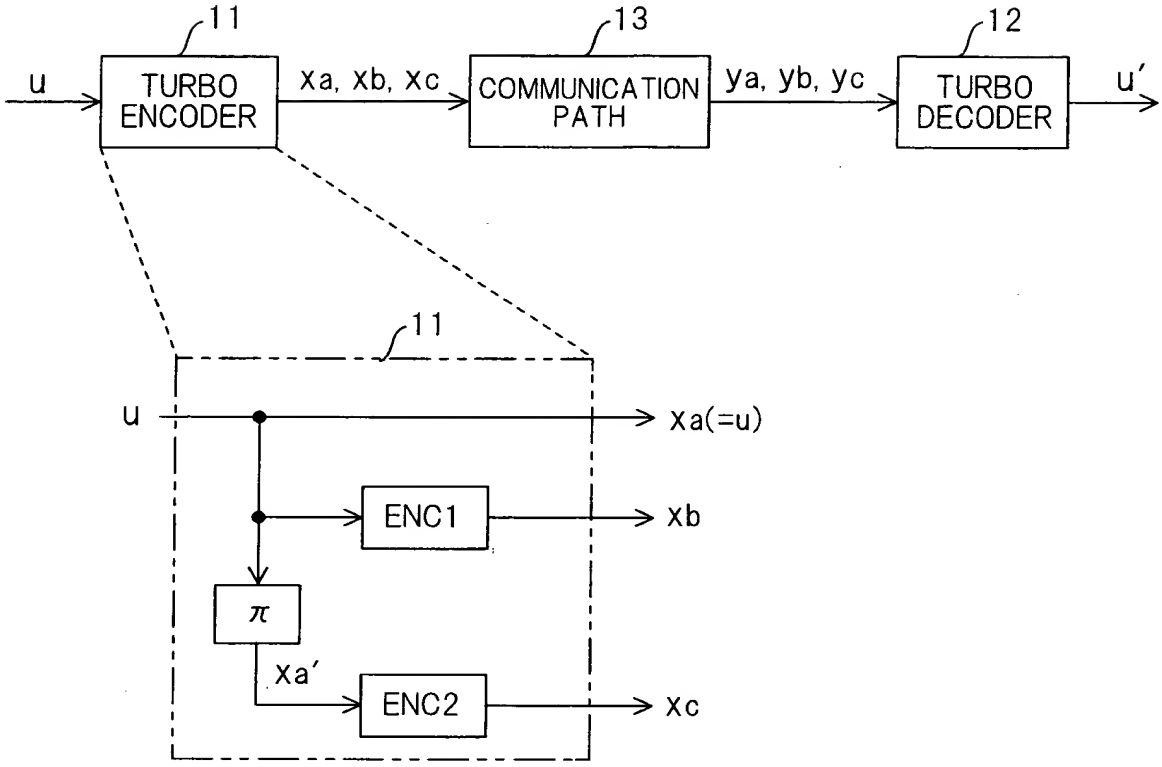

11
13
12
u
TURBO ENCODER
xa, xb, xc
COMMUNICATION PATH
ya, yb, yc
TURBO DECODER
u'
11
u
xa(=u)
ENC1
xb
π
xa'
ENC2
xc

FIG. 15

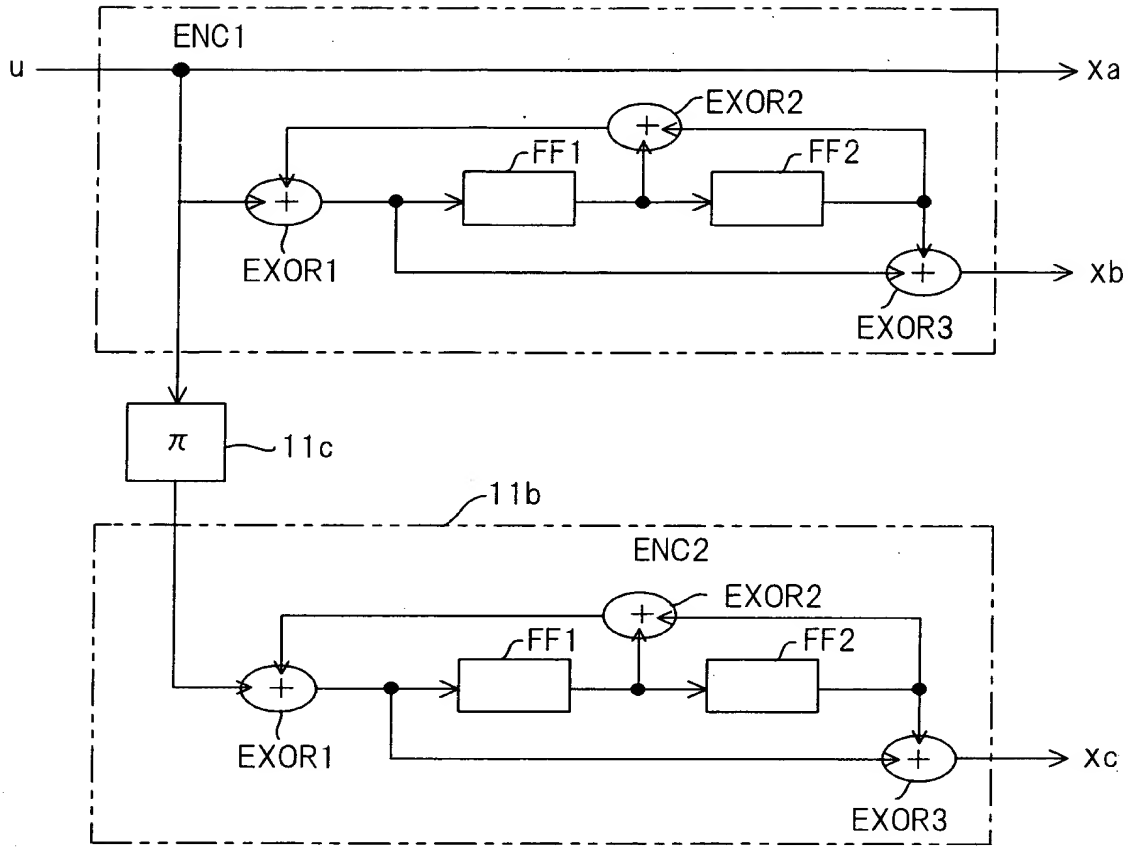

ENC1
u
Xa
EXOR2
FF1
FF2
EXOR1
Xb
EXOR3
π
11c
11b
ENC2
EXOR2
FF1
FF2
EXOR1
Xc
EXOR3

FIG. 16

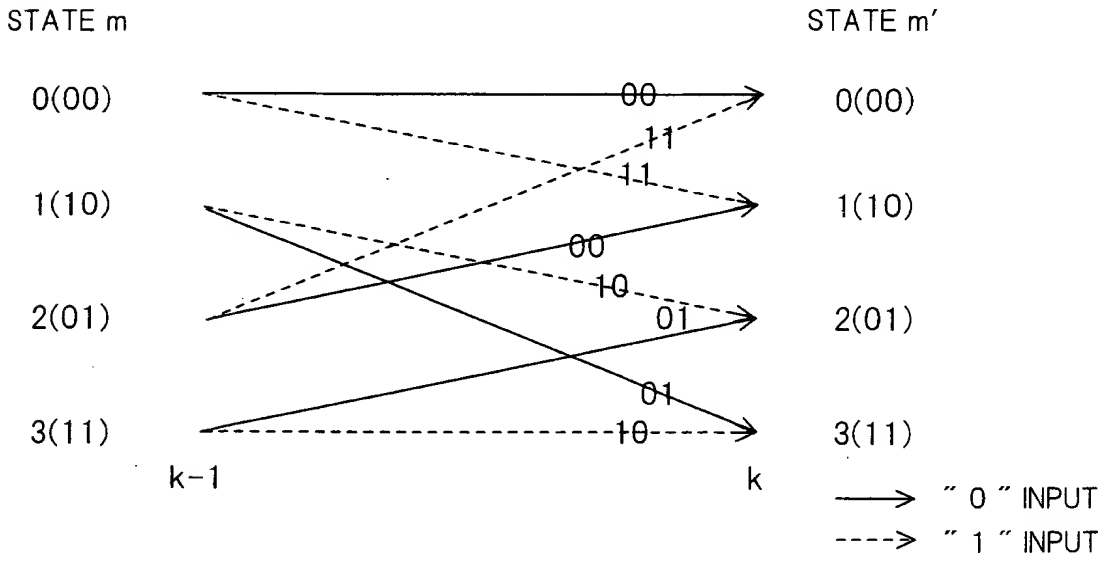
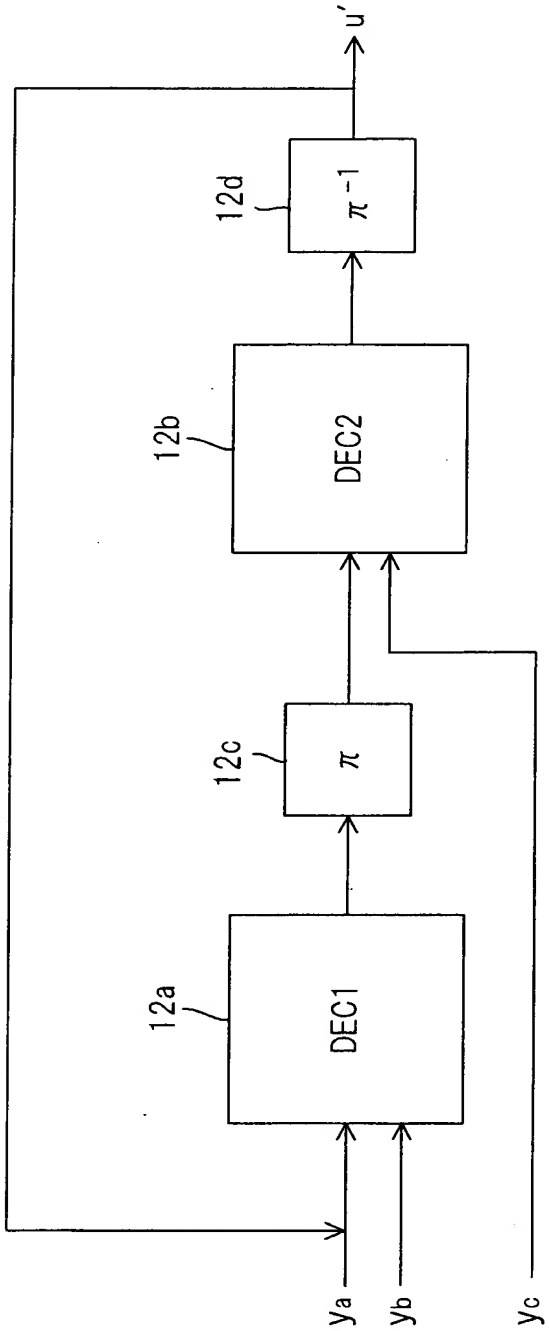
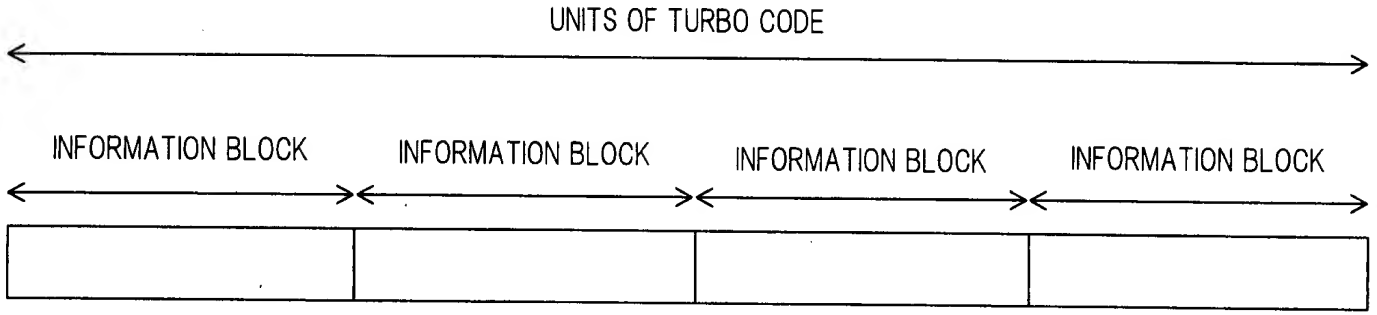

STATE m
STATE m'
0(00)
1(10)
2(01)
3(11)
00
11
11
00
10
01
01
10
k-1
k
" 0 " INPUT
" 1 " INPUT

FIG. 17



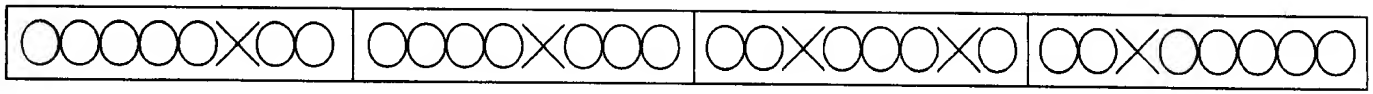
(a)



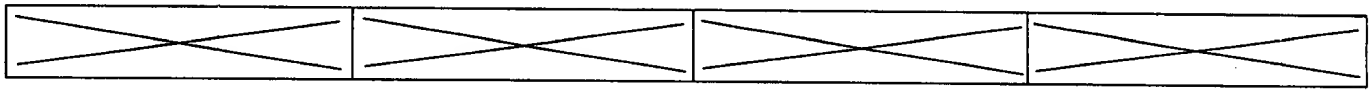
(b)

ERROR PATTERN ACCORDING TO PRIOR ART

ERROR ON PER-BIT BASIS



ERROR ON PER-INFORMATION-BLOCK BASIS



○ : CORRECT　　× : ERROR

FIG. 18